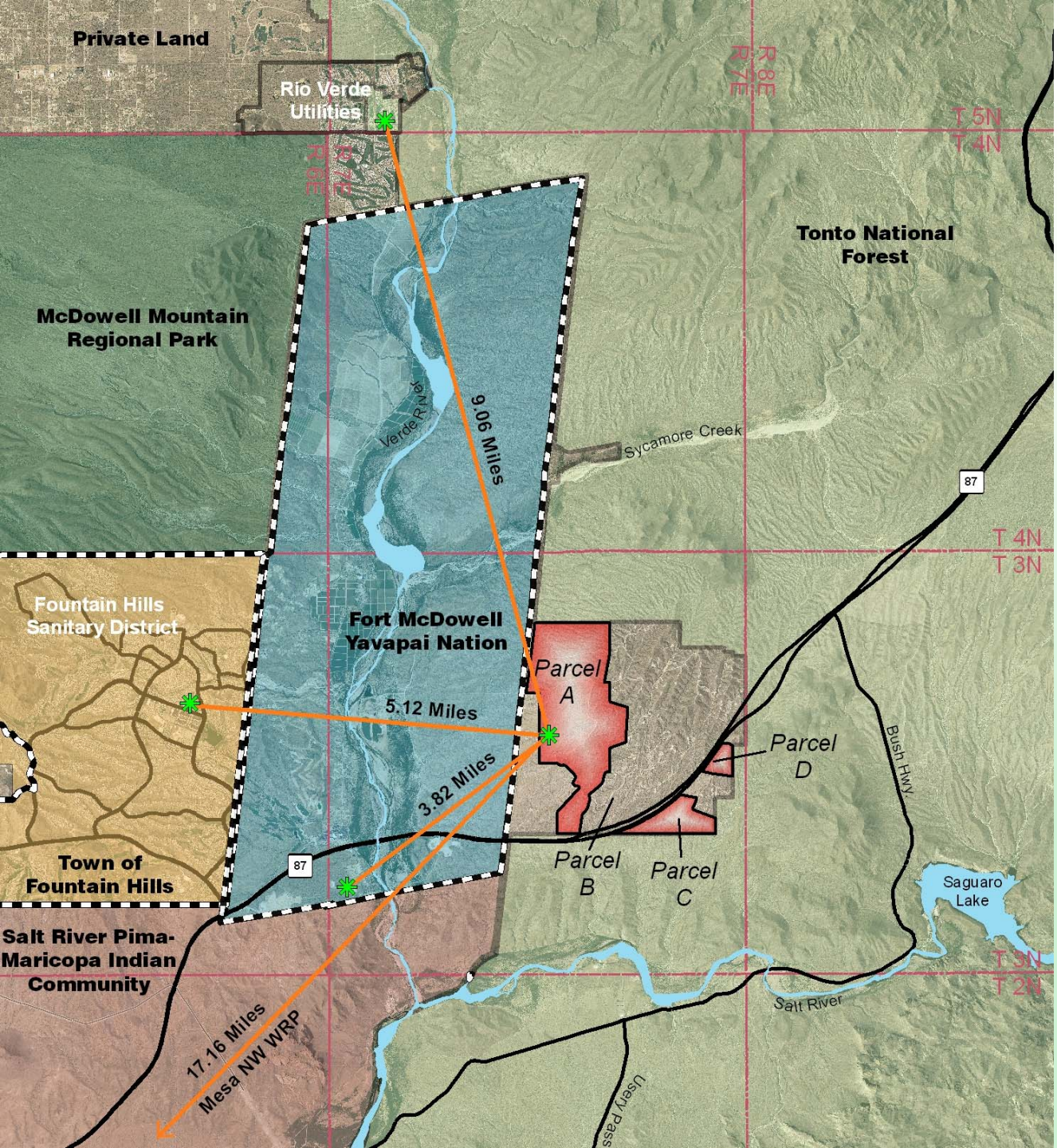
MAG 208 Water Quality Management Plan
Small Plant Review and Approval
for

The Preserve at Goldfield Ranch Water Reclamation Facility

March 20, 2008



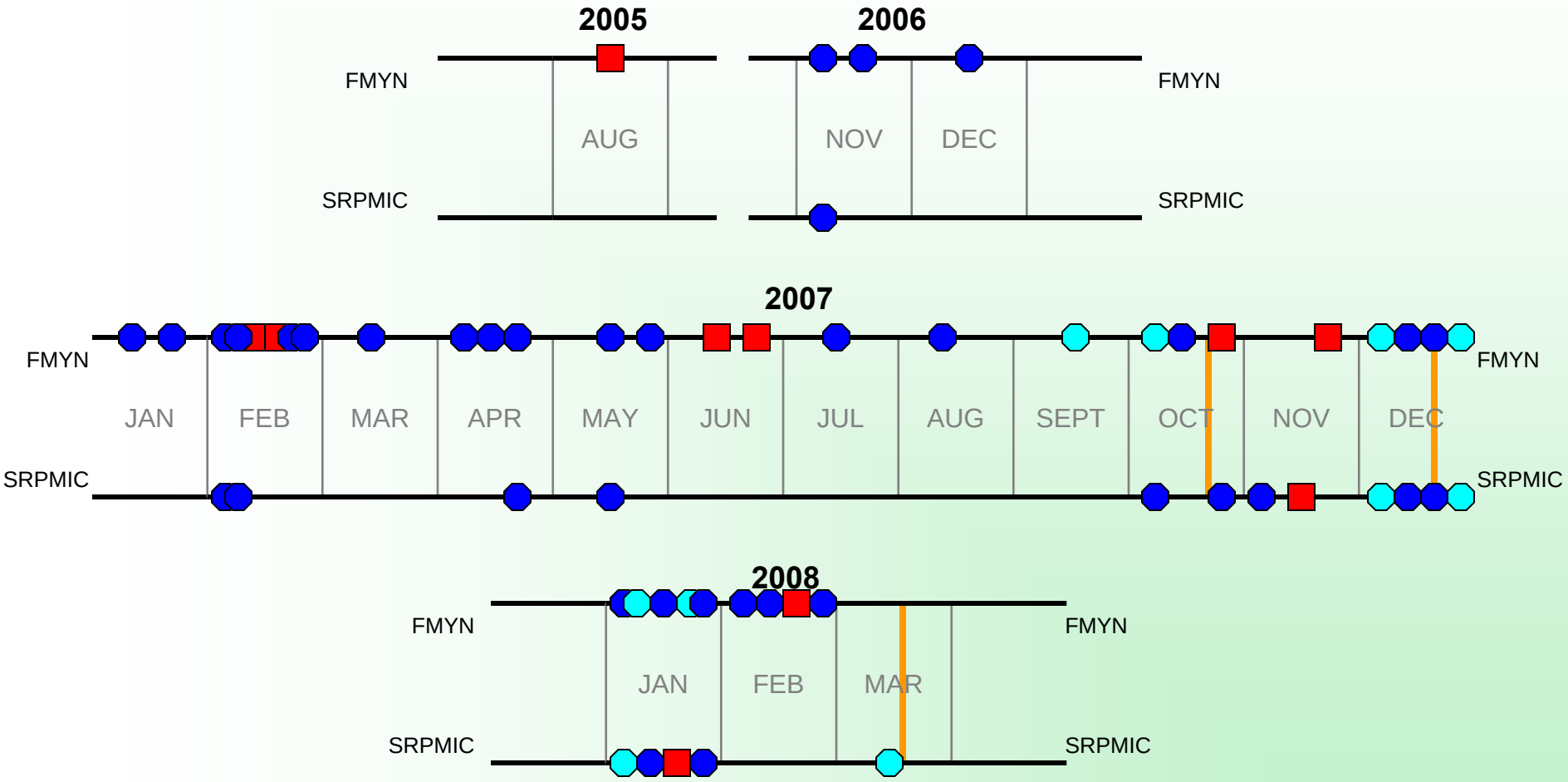
Proximity Map

DMP Comparison Chart

	1995	**2007**
Density	2,032 du 0.92 du/ac	1,000 du 0.5 du/ac
Commercial	90 acres	None
Golf Course	190 acres	None
Water Budget	2,127 acre-feet per year	732 acre-feet per year
Traffic	34,150 daily trips	6,912 daily trips

Responsible development

Timeline of Tribal Communication



Meeting | Correspondence prepared by Goldfield | Correspondence received by Goldfield | WQAC Hearing

Tribal Communication

2005 – 10/22/2007

Date	From	To	Description
8/19/2005	Goldfield	FMYN	Telephone conversation - request for meeting
8/25/2005			Meeting with FMYN
11/17/2006	Goldfield	FMYN/SRPMIC	DMP correspondence
11/21/2006	Goldfield	FMYN	Telephone conversation
11/22/2006	Goldfield	FMYN	Land use plan correspondence
12/5/2006	Goldfield	FMYN	Telephone conversation
12/6/2006	Goldfield	FMYN	DMP Amendment correspondence
1/26/2007	Goldfield	FMYN	Master Water Report correspondence
1/29/2007	Goldfield	FMYN	Master Water and Wastewater Master Plan correspondence
2/8/2007	Goldfield	FMYN/SRPMIC	Neighborhood open house invitation
2/10/2007	Goldfield	FMYN/SRPMIC	Goldfield monthly newsletter
2/21/2007	Goldfield	FMYN	Meeting with Dr. Carole Klopatek
2/21/2007	Goldfield		Goldfield Ranch Homeowner's Association meeting
2/26/2007	Goldfield	FMYN	Master Water Plan correspondence
2/28/2007	Goldfield		Neighborhood open house
3/1/2007	Goldfield	FMYN	Follow up telephone conference regarding Water Master Plan
3/8/2007	Goldfield	FMYN	Follow up telephone conference regarding Water Master Plan
3/16/2007	Goldfield		Goldfield monthly newsletter
4/4/2007	Goldfield	FMYN	DMP second submittal correspondence
4/9/2007	Goldfield	FMYN	Provided hard copy of second submittal of DMP
4/12/2007	Goldfield	FMYN/SRPMIC	Goldfield monthly newsletter

Tribal Communication

2005 – 10/22/2007 (continued)

Date	From	To	Description
5/14/2007	Goldfield	FMYN	Transmittal of Draft 208 Plan
5/29/2007	Goldfield	FMYN/SRPMIC	Neighborhood open house invitation
6/11/2007	Goldfield		Neighborhood open house
6/27/2007	Goldfield		Neighborhood open meeting
7/18/2007	Goldfield	FMYN	Transmittal of third submittal of DMP
8/15/2007	Goldfield	FMYN	Transmittal of archaeological report
9/25/2007	FMYN	Goldfield	Letter indicating no comments at this time
10/2/2007	FMYN	MCESD	Comments from FMYN
10/8/2007	Goldfield	FMYN	Response to comments
10/9/2007	Goldfield	SRPMIC	Transmittal of Draft 208 Plan to SRPMIC
10/10/2007			Meeting with FMYN
10/22/2007			**WQAC Meeting**

Tribal Communication

10/23/2007 – 12/21/2007

Date	From	To	Description
10/30/2007	Goldfield	SRPMIC	Offer to meet
11/19/2007			Meeting w/ SRPMIC
11/20/2007	Goldfield	SRPMIC	Confirmation of 11/19/07 meeting
11/28/2007			Meeting with FMYN Tribal Council
12/4/2007	SRPMIC	MAG	Comments from SRPMIC (2 parts)
12/5/2007	FMYN	MAG	Report of 11/28/07 meeting
12/5/2007	Goldfield	FMYN	Transmittal of 12/4/07 CMX letter to MAG
12/4/2007	Goldfield	MAG	Supplemental materials requested
Undated	SRPMIC	Goldfield	Request for additional information
12/13/2007	Goldfield	MAG	Response to 12/4/07 SRPMIC comments
12/17/2007	FMYN	MAG	Comments from FMYN
12/20/2007	SRPMIC	MAG	Letter of concerns
12/21/2007			**Second WQAC Meeting**

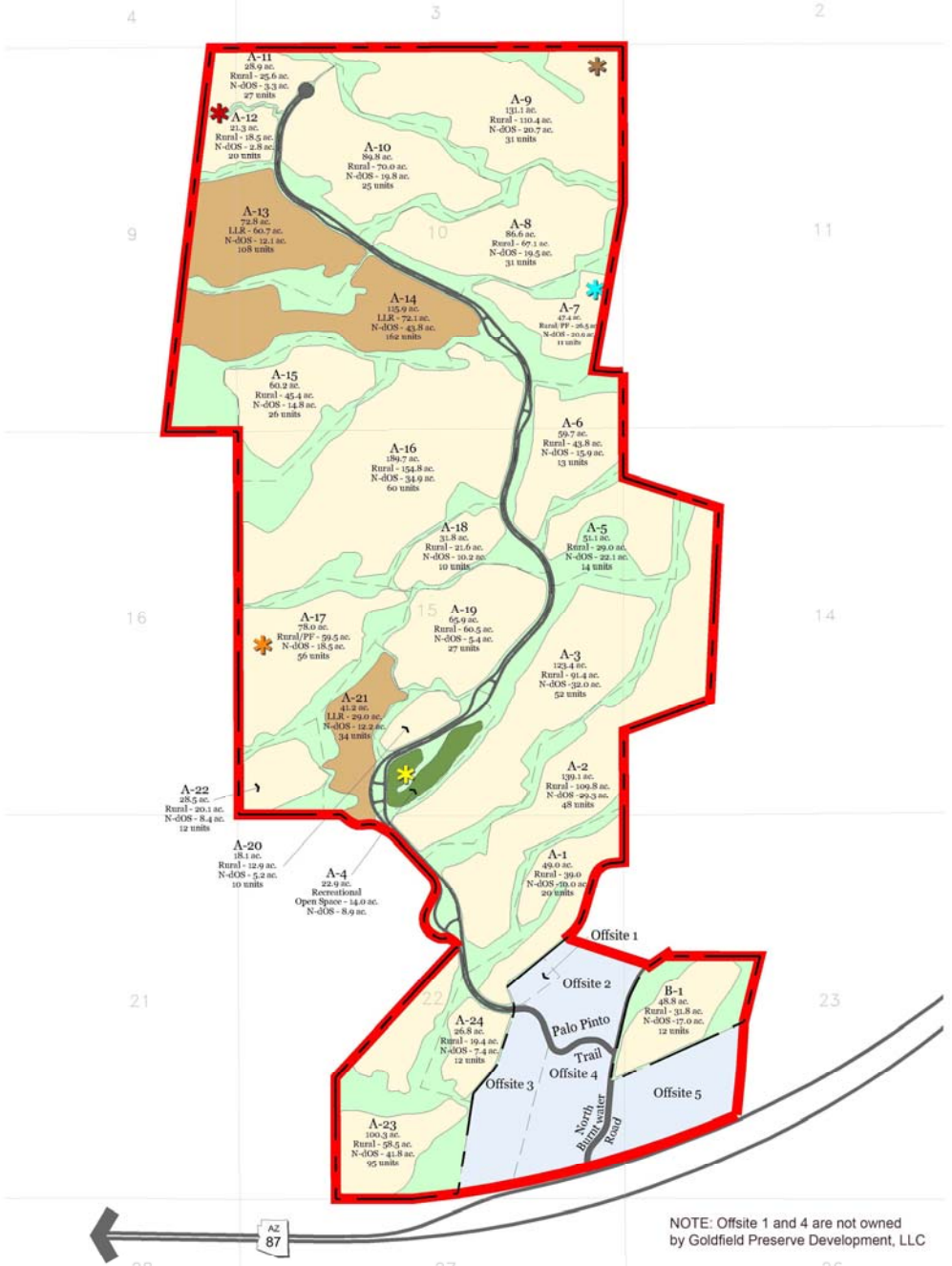
Tribal Communication

12/22/2007 – 3/20/2008

Date	From	To	Description
1/11/2008	SRPMIC	Goldfield	Preliminary comments from SRPMIC
1/15/2008	Goldfield	FMYN	Transmittal of zoning and pre-plat applications
1/17/2008	Goldfield	SRPMIC	Plan for January meeting
1/17/2008	FMYN	Goldfield	Request for meeting
1/18/2008	Goldfield	FMYN	Response to comments and request for meeting
1/28/2008	FMYN	Goldfield	Request for meeting
1/29/2008			Meeting with SRPMIC
1/30/2008	Goldfield	FMYN	Request for meeting
1/30/2008	Goldfield	SRPMIC	1/29/08 meeting summary
2/11/2008	Goldfield	FMYN	Request for meeting
2/13/2008	Goldfield	FMYN	Request for meeting and list of documents provided
2/27/2008			Meeting with FMYN
2/28/2008	Goldfield	FMYN	2/27/08 meeting summary and response to comments
3/10/2008	SRPMIC	MAG	Memorandum of concerns
3/17/2008	SRPMIC	Goldfield	Letter of concerns
3/20/2008			**Third WQAC Meeting**

Responsive Modifications

- Comment: Parcel B and additional offsite parcels should be included in service area
- Response:
  - Increase in service area from 1,680 acres to 1,902 acres
  - Population served of 3,283 persons
  - Maximum WRF capacity of 0.4 MGD sufficient



Responsive Modifications

- Comment: Reflect language provided in the DMP Amendment related to reuse, where feasible
- Response:
  - To the maximum extent feasible, irrigation water supplied for common and open space areas will be supplied by treated effluent by build out of the development
  - Reuse of treated effluent will be pursuant to the terms and conditions of an ADEQ Reuse Permit

Groundwater Management Act
Safe Yield by 2025

[A] groundwater management goal which attempts to achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial recharge in the active management area. ARS §45-561(12).

Responsible development dictates recharge

Responsive Modifications

- Comment: Address inconsistencies between 208 Application and other submittals
- Response: Application modified to ensure consistency

Document	Gross Area (acres)	Dwelling Units	Population	Average Day Flow (MGD)
MAG 208 Plan Amendment (October 2007)	1,679.6 (Parcel A only)	983 (with potential spa/resort)	3,146	0.392 (based on 100 gpcd* and gross acreage)
Master Wastewater Report Amendment (January 2008)	1,902.1 (Parcels A & B and offsite areas)	1,026 (with potential spa/resort)	3,283	0.309 (based on 80 gpcd* and net acreage)
MAG 208 Plan Amendment (March 2008)	1,902.1 (Parcels A & B and offsite areas)	1,026 (with potential spa/resort)	3,283	0.367 (based on 100 gpcd* and net acreage)

* 80 gallons per capita per day (gpcd) used for pipeline design per AAC

* 100 gpcd used for treatment plant design per County requirements

Responsive Modifications

- Comment: Operation and maintenance costs are grossly underestimated
- Response:
  - Increased operation and maintenance cost range from $150,000 – $200,000 to

    $250,000 – $300,000 annually
  - Based on review with other operators and suppliers

208 Small Plant Criteria for Technical Sufficiency

Section 4.5.2(2) – Outside of Municipal Planning Area:

To be approved for construction, a small wastewater treatment plant (2.0 MGD ultimate capacity or less) not otherwise mentioned in the MAG 208 Plan and located outside a Municipal Small Plant Planning Area must:

1. *Have the review and comment of any municipality whose Small Plant Planning Area is within three miles of the proposed plant location or service area;*
2. *Not adversely affect the operation or financial structure of existing or proposed wastewater treatment plants;*
3. *Be consistent with State and County regulations and other requirements;*
4. *Be otherwise consistent with the MAG 208 Plan; and,*
5. *Be evaluated and approved, or modified by Maricopa County Environmental Services Department (MCESD).*

The Preserve at Goldfield Ranch

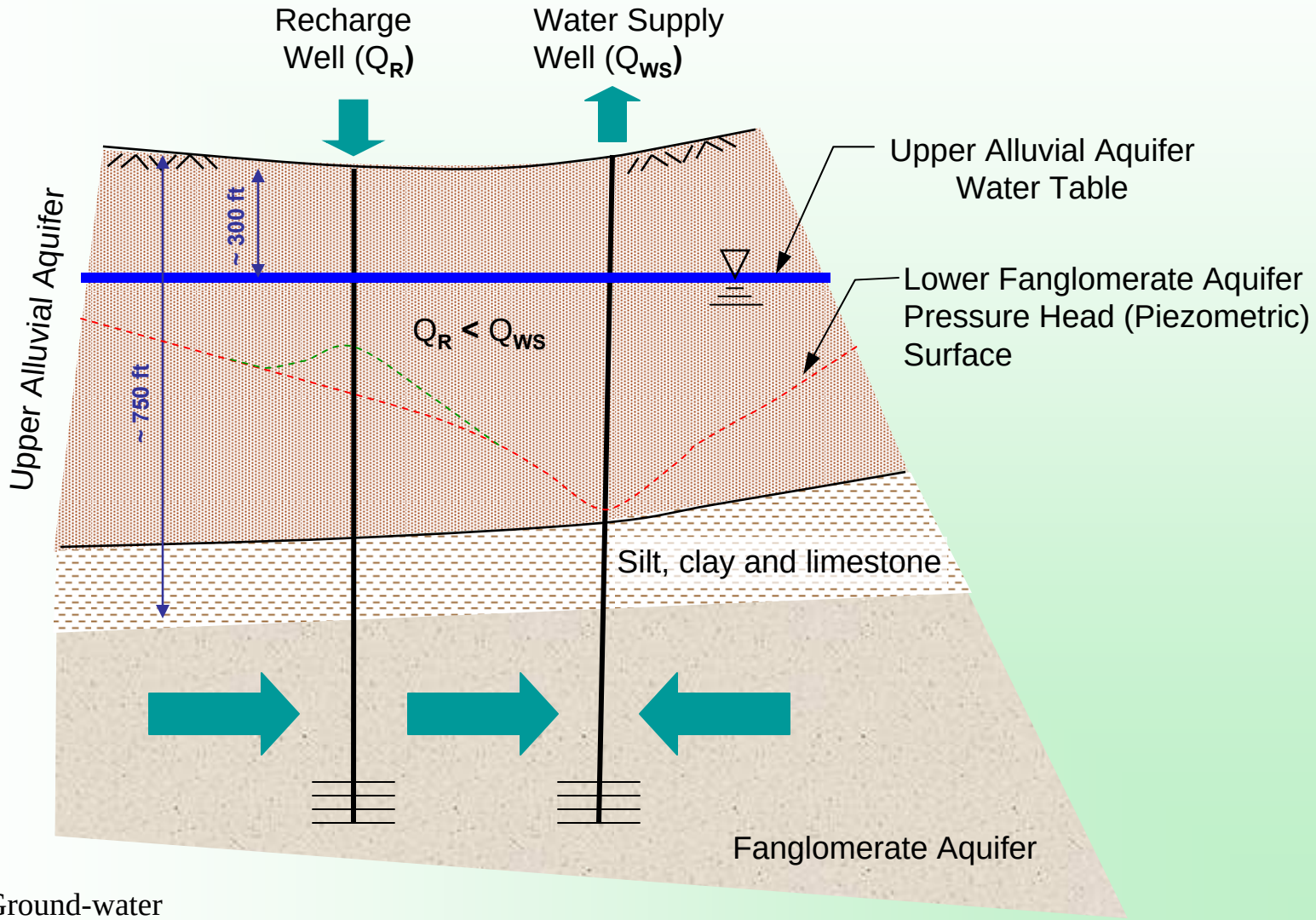
CMX

Southwest Ground-water Consultants, Inc.

Key Concern: Water Quality

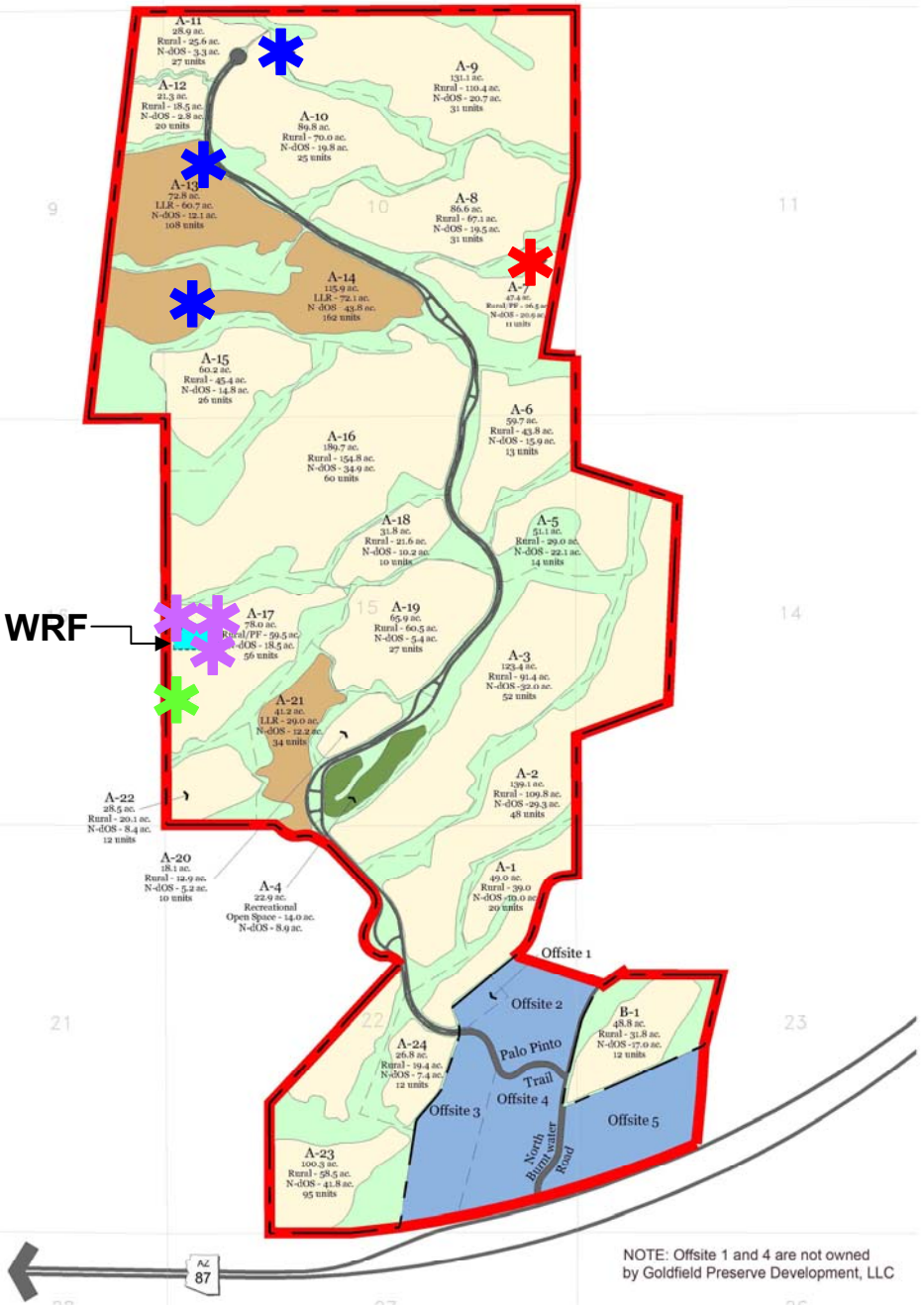
- Pursuant to the Arizona Administrative Code, WRF will be required to meet:
  - Best available demonstrated control technology (R18-9-B204)
  - A+ reclaimed water standards (R18-11-303)
  - Narrative aquifer water quality standards:
    - *A discharge shall not cause a pollutant to be present in an aquifer classified for a drinking water protected use in a concentration which endangers human health* (AAC R18-11-405(A))
    - *A discharge shall not cause a pollutant to be present in an aquifer which impairs existing or reasonably foreseeable uses of water in an aquifer* (AAC R18-11-405(C))
  - Numeric aquifer water quality standards (AAC R18-11-406)

Recharge and Production Aquifer Cross-Section



Well Locations

- Separation between recharge wells and water supply wells is approximately 1 mile
- A monitoring well will be installed down-gradient of the recharge wells

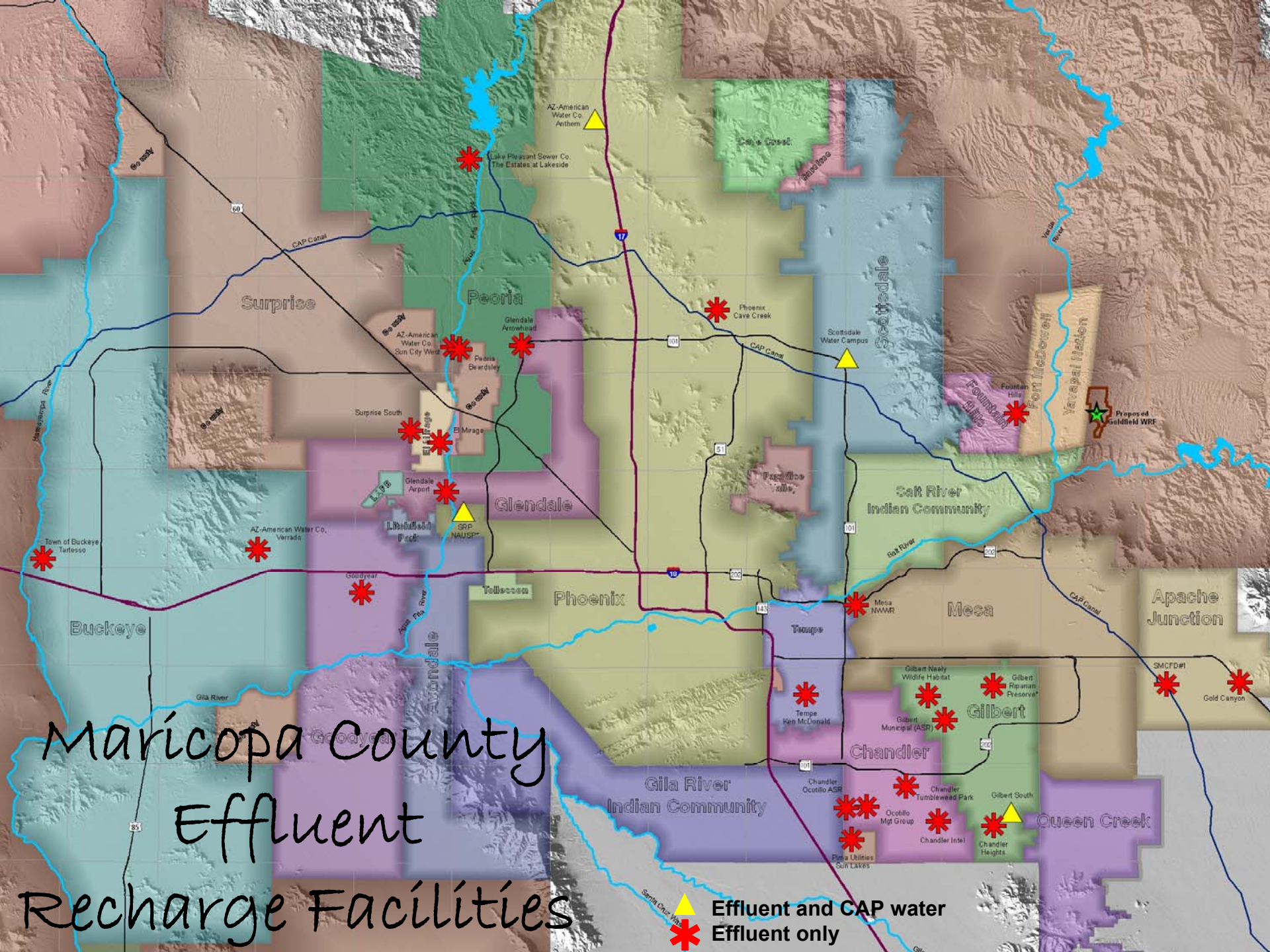


Groundwater Well Site

Monitoring Well Site

Recharge Well Site

Water Campus


Maricopa County
Effluent
Recharge Facilities
Effluent and CAP water
Effluent only
AZ-American Water Co. Anthem
Lake Pleasant Sewer Co. The Estates at Lakeside
Phoenix Cave Creek
Glendale Arrowhead
AZ-American Water Co. Sun City West
Peoria Beardsley
Surprise South
El Mirage
Glendale Airport
SRP NAUSP
AZ-American Water Co. Verrado
Town of Buckeye Tartesso
Goodyear
Tolleson
Mesa NWWR
Scottsdale Water Campus
Fountain Hills
Proposed Goldfield WRF
Tempe Ken McDonald
Gilbert Nesly Wildlife Habitat
Gilbert Riparian Preserve
Gilbert Municipal (ASR)
Chandler Ocotillo ASR
Chandler Tumbleweed Park
Ocotillo Mgt Group
Chandler Intel
Gilbert South
Chandler Heights
Pima Utilities Sun Lakes
SMCFD#1
Gold Canyon
Surprise
Peoria
Glendale
Phoenix
Scottsdale
Fountain Hills
Fort McDowell Yavapai Nation
Salt River Indian Community
Mesa
Apache Junction
Tempe
Gilbert
Chandler
Gila River Indian Community
Queen Creek
Buckeye
Avondale
Litchfield Park
CAP Canal
Gila River
Salt River
Agua Fria River
Hassayampa River
Verde River

Tribal Comment and Response

- Comment: Facility financing
- Response:
  - Developer funds capital costs
  - County Improvement District (Maricopa County Board of Supervisors) established for ongoing operation and maintenance
  - User fees based on land ownership
  - Financial assurance letter, Consolidated Financial Report and independent auditor’s assessment of report provided

Comparison of Financial Documentation in Approved 208 Plan Amendments

		Financial Statement Provided	Financial Backing by Municipality	WWTP Construction Funding	WWTP Operation Funding
2002	**Quintero Golf and Country Club**	No – Text statement indicating developer funding construction	Yes	Developer	City of Peoria (user fees)
2003	**Desert Oasis**	Yes, but not for entity funding WWTP – Equity Assets $20,594,000	No	Developer	Arizona-American Water Company (user fees collected by City of Surprise)
2004	**Ruth Fisher School WWTP**	No – Letter from school indicating sufficient capital	No	Developer	Contracted Certified Operator
2006	**Estates at Lakeside**	Yes – Equity Assets $100,000	Yes	Developer	City of Peoria (user fees)
2007	**Scorpion Bay WWTP**	Yes – Letter from M&I Bank funding 80% of construction	No	Developer	Owner (user fees)
2008	**Preserve at Goldfield Ranch WRF**	Yes – Equity Assets $ 4,862,255	No	Developer	Contracted Certified Operator (user fees)

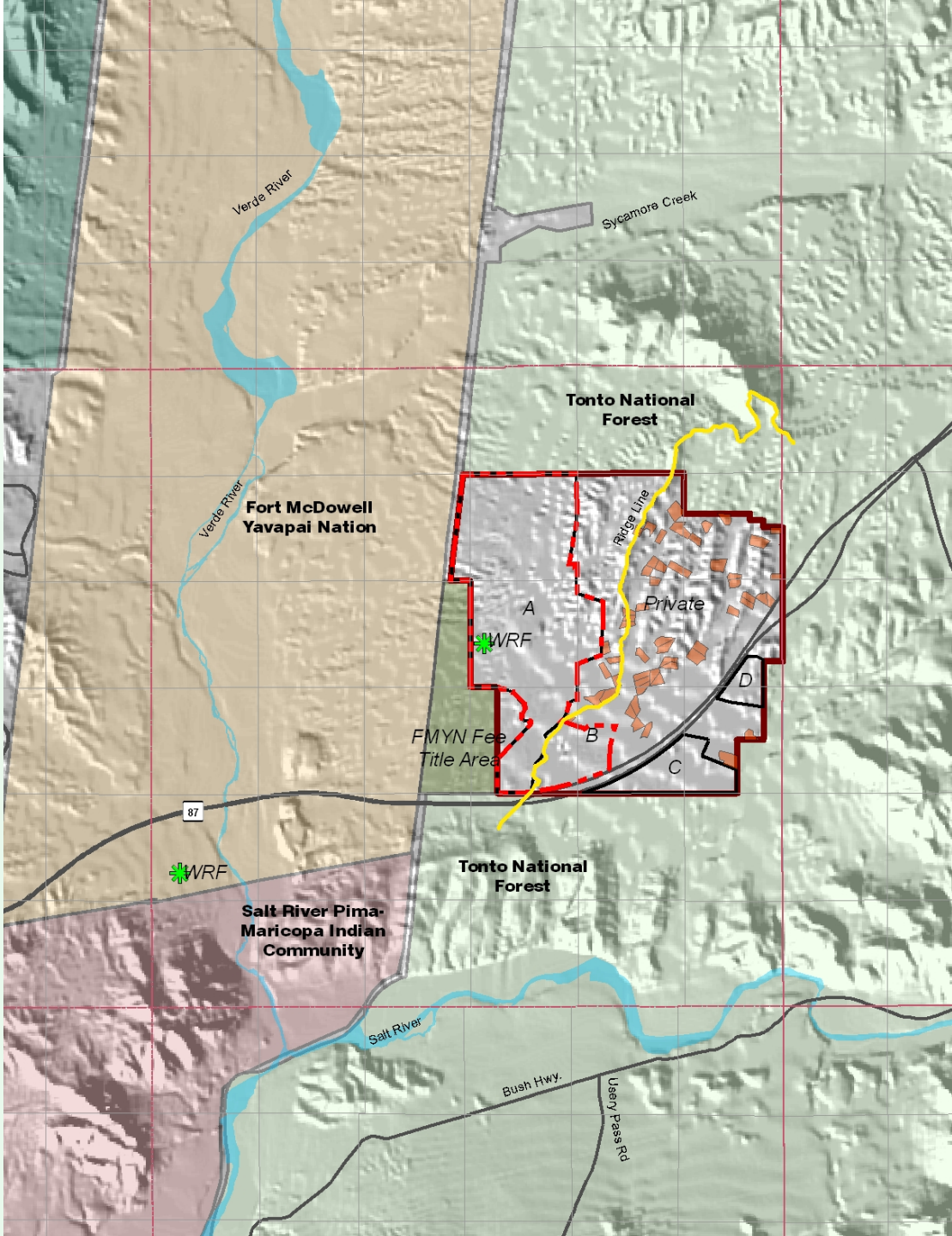
Comparison of Operation & Maintenance Costs in Approved 208 Plan Amendments

	MAG 208 Plan	WRF Capacity (MGD)	Annual Operation & Maintenance Cost	Cost per gallon
2002	**Quintero Golf and Country Club**	0.15	$210 (cited in report as $1.40/1,000 gallons)	$0.0014
2003	**Desert Oasis**	0.35	Not Provided	Unknown
2004	**Ruth Fisher School WWTP**	0.042	$93,260	$0.0061
2006	**Estates at Lakeside**	0.12	Not Provided	Unknown
2007	**Scorpion Bay WWTP**	0.035	$121,500 at Year 5 (buildout)	$0.0095
2008	**Preserve at Goldfield Ranch WRF**	0.40	$250,000-$300,000	$0.0017-$0.0021

Note: The impact of different treatment technologies, location, terrain and presence of existing facilities are not factored into this comparison.

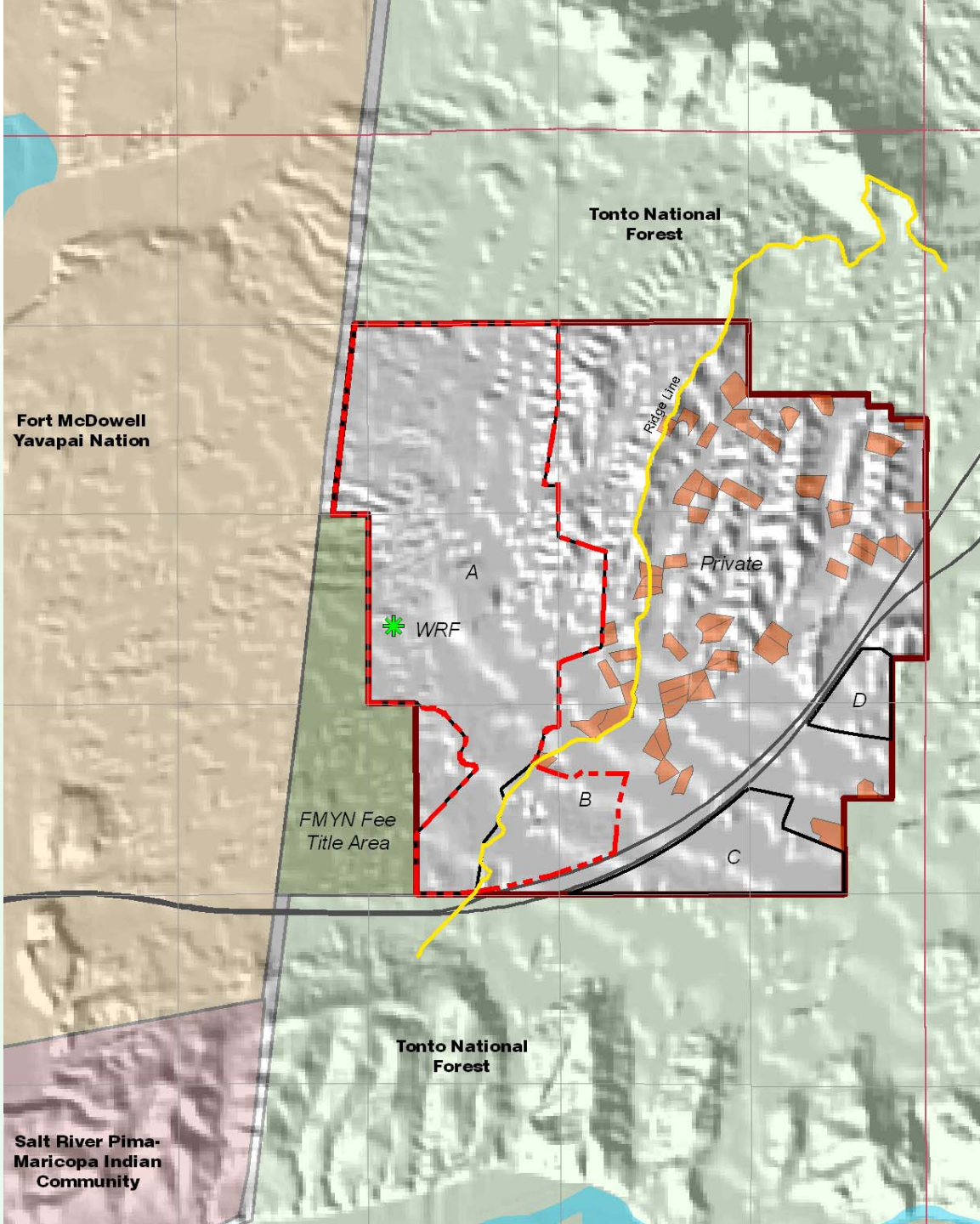
Tribal Comment and Response

- Comment: Include Parcels C and D
- Response:
  - Distance, topography, jurisdictional waters and State Route 87 constrain the feasibility of serving these parcels



Wastewater Service to Goldfield Ranch

- Topographic/ hydrologic constraints
- Limited access to parcels does not coincide with natural fall of land
- Existing 5 acre or larger lots to east operate on septic systems
- Economically infeasible – separate property owners



Tribal Comment and Response

- Comment: No letter provided to FMYN to determine if we will adversely affect the operation or financial structure of their existing facility as a neighboring jurisdiction
- Response:
  - Letter and Application provided to FMYN on May 14, 2007
  - FMYN previously stated there was no desire to provide wastewater service to Goldfield
  - Connection to existing FMYN facility infeasible due to: distance, topography, land ownership, existing State Route 87 and Verde River

Tribal Comment and Response

- Comment: Provide emergency plan and redundancy
- Response:
  - Contingency plan to be provided under APP application pursuant to AAC R18-9-A204
    - Stormwater management (SWPPP) and Best Management Practices, such as erosion control, dust control, sediment control, and good housekeeping/ materials management
    - Monitoring and sampling plan
    - Reporting requirements
    - Catastrophic failure contained onsite
  - Redundancy factored into engineering design
    - Design operating capacity will be two times the average day flow
    - Redundant recharge wells
    - Standby generator

Tribal Comment and Response

- Comment: Groundwater mounding and biological clogging
- Response:
  - Mounding
    - Premise of USF permit is demonstration of no unreasonable harm
    - USF permit application requires mounding analysis to estimate area of potential impact
    - Quarterly measurement and reporting of water levels including alert levels
    - Mounding is an issue when water levels approach within 10 to 20 feet of the ground surface
    - Depth to groundwater is approximately 300 feet
    - Recharge will be to lower, confined aquifer
  - Biological clogging
    - Minimized through filtration, disinfection and proper operation and maintenance (including backwash)
    - Common practice – Fountain Hills, Scottsdale, Chandler, et al. recharge

Tribal Comment and Response

- Comment: Provide detailed site plan
- Response:
  - Conceptual site plan provided
  - Engineered site plan to be provided at time of APP and USF permit applications

Tribal Comment and Response

- Comment: Apply for USF and APP permits
- Response:
  - Pre-application meetings are established with ADWR and ADEQ

Tribal Comment and Response

- Comment: Arizona Corporation Commission reports A Quality Water Company to be dissolved
- Response:
  - Arizona Corporation Commission filings will be rectified
  - County Improvement District (Maricopa County Board of Supervisors) has oversight

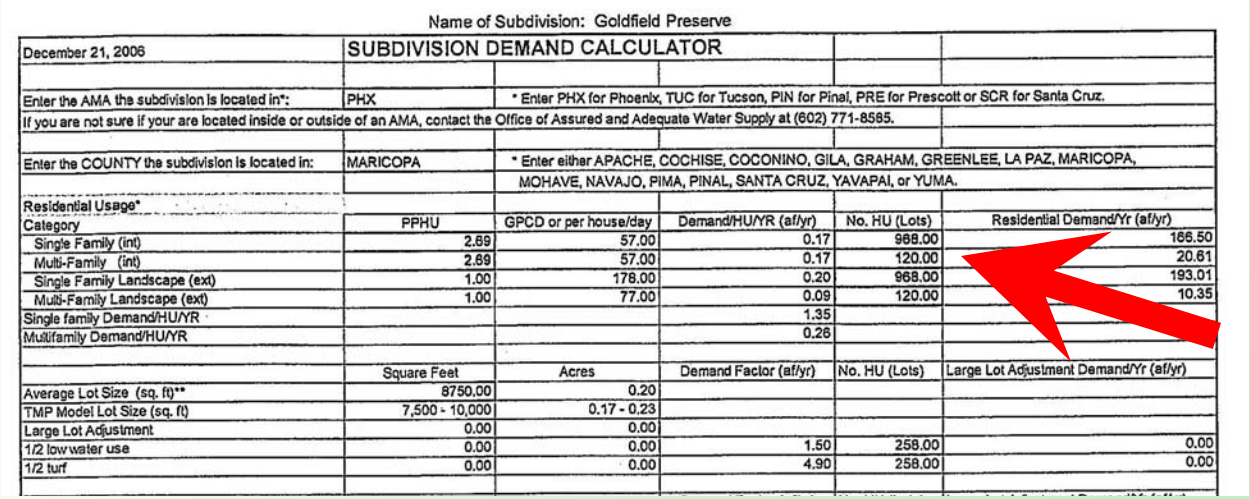
Tribal Comment and Response

- Comment: Provide additional hydrogeologic information
  - Additional information will be provided when available pursuant to the APP and USF

Tribal Comment and Response

- Comment: Clarify resort/spa accounted for in Anaylsis of Assured Water Supply application
- Response:
  - Greatest potential water use included (with resort/spa indicated as 120 multi-family units)

Analysis of Assured Water Supply approved June 12, 2007



Name of Subdivision: Goldfield Preserve

December 21, 2006	SUBDIVISION DEMAND CALCULATOR				
Enter the AMA the subdivision is located in*:	PHX	* Enter PHX for Phoenix, TUC for Tucson, PIN for Pinal, PRE for Prescott or SCR for Santa Cruz.			
If you are not sure if your are located inside or outside of an AMA, contact the Office of Assured and Adequate Water Supply at (602) 771-8585.					
Enter the COUNTY the subdivision is located in:	MARICOPA	* Enter either APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE, LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, or YUMA.			
Residential Usage*					
Category	PPHU	GPCD or per house/day	Demand/HU/YR (af/yr)	No. HU (Lots)	Residential Demand/Yr (af/yr)
Single Family (int)	2.69	57.00	0.17	988.00	166.50
Multi-Family (int)	2.69	57.00	0.17	120.00	20.61
Single Family Landscape (ext)	1.00	178.00	0.20	968.00	193.01
Multi-Family Landscape (ext)	1.00	77.00	0.09	120.00	10.35
Single family Demand/HU/YR			1.35		
Multifamily Demand/HU/YR			0.26		
	Square Feet	Acres	Demand Factor (af/yr)	No. HU (Lots)	Large Lot Adjustment Demand/Yr (af/yr)
Average Lot Size (sq. ft)**	8750.00	0.20			
TMP Model Lot Size (sq. ft)	7,500 - 10,000	0.17 - 0.23			
Large Lot Adjustment	0.00	0.00			
1/2 low water use	0.00	0.00	1.50	258.00	0.00
1/2 turf	0.00	0.00	4.90	258.00	0.00

Tribal Comment and Response

- Comment: Groundwater level decline will affect Community's water resources
- Response:
  - Issue does not pertain to the 208 Application
  - Regulated by ADWR under the Groundwater Management Act which precludes impacts to adjacent wells or users

Tribal Comment and Response

- Comment: Stormwater and irrigation water may percolate into the upper/middle aquifer units and impact the Verde River
- Response:
  - Issue does not pertain to the 208 Application
  - Drainage and irrigation system designs provide for retention of stormwater flows
  - Reviewed and approved through Maricopa County

Tribal Comment and Response

- Comment: Report fails to assess if connection exists between Fountain Hills subbasin and the adjacent subbasins within the Phoenix AMA which may impact water quality
  - SRPMIC correspondence acknowledges "research based on information in ADWR reports, indicates that there is no connection."
- Response:
  - Effluent to meet A+ water quality standards
  - Regulated under APP permit
  - Required ongoing monitoring and reporting to safeguard down-gradient users

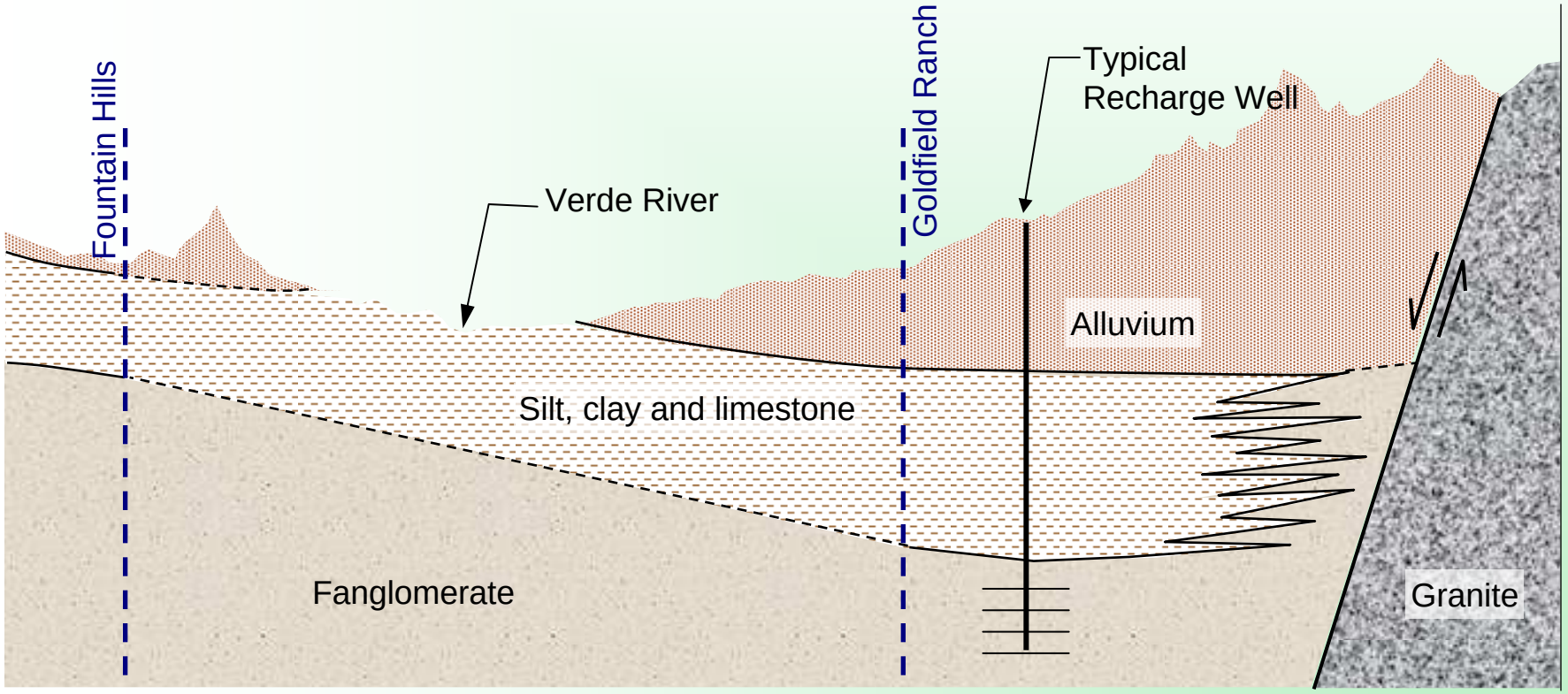
Tribal Comment and Response

- Comment: Desert nesting bald eagle may be impacted by micro-pharmaceuticals and other by-products in the Verde River
- Response:
  - Issue does not pertain to the 208 Application
  - No discharge to the Verde River
  - WRF will comply with all applicable regulations and standards

Tribal Comment and Response

- Comment: Clay layer does not confine the upper and lower aquifer and thins out at the edges
- Response:
  - Well tests performed on site show aquifer is confined
  - Additional investigation is ongoing
  - Reference materials supporting presence of confining clay layer (playa deposit)
    - Pope, Jr. C.W. 1974. *Geology of the Lower Verde River Valley, Maricopa County, Arizona*. M.S. thesis, Arizona State University (LD 179.151974P66)
    - Skotnicki, S.J., E. M. Young, T.C. Goode and G.L. Bushner 2003. *Subsurface Geologic Investigation of Fountain Hills and Lower Verde River Valley, Maricopa County, Arizona.* Arizona Geological Survey Contributed Report CR-03-B.
    - E.L. Montgomery & Associates, 2004. *Physical Availability Determination in Support of a Modification of Designation of Assured Water Supply for Chaparral City Water Company, Fountain Hills, Arizona.* Consultant's Report.

Hyrdogeologic Cross-Section



Southwest Ground-water
Consultants, Inc.

Requirements of Aquifer Protection Permit – Individual Permits

- Technical (AAC R18-9-A202)
- Financial (AAC R18-9-A203)
- Contingency Plan (AAC R18-9-A204)
- Alert Levels, Discharge Limitations, and AQLs (AAC R18-9-A205)
- Monitoring Requirements (AAC R18-9-A206)
- Reporting Requirements (AAC R18-9-A207)
- Compliance Schedule (AAC R18-9-A208)
- Temporary Cessation, Closure, Post-closure (AAC R18-9-A209)

APP Technical Requirements

(AAC R18-9-A202)

- Topographic map
- Facility site plan
- Facility design documents
- Summary of known and proposed facility discharge activities
- Description of Best Available Demonstrated Control Technology (BADCT) proposed for facility
- Contingency plan that meets AAC R18-9-A204
- Hydrogeologic Study that defines discharge impact area
- Indicate alert levels, discharge limitations, monitoring requirements, compliance schedules and temporary cessation for facility
- Closure and post-closure strategies/plans
- Any further relevant information determined by ADEQ necessary for permit

APP Financial Requirements

(AAC R18-9-A203)

- Demonstration of financial capability to construct, operate, close and ensure proper post-closure care of facility in compliance with ARS Title 49 Chapter 2 Article 3
- Proof of financial assurance mechanism
- Permit amendment if financial assurance changes
- Maintain recordkeeping

APP Contingency Plan Requirements

(AAC R18-9-A204)

- Specify a contingency plan for possible violations of:
  - Aquifer Water Quality Standards or an Acceptable Quality Level
  - Discharge limitation
  - Permit conditions
  - Alert level
  - Endangerment to the public health or environment
- Contingency plan will include:
  - Actions to be taken if a discharge violation occurs
  - 24-hour emergency response measures
  - Provide name of emergency response coordinator
  - List of people to contact
  - Description of procedures, personnel and equipment proposed to mitigate unauthorized discharges

APP Alert Levels, Discharge Limitations and Acceptable Quality Levels

(AAC R18-9-A205)

- ADEQ prescribes:
  - Alert levels
  - Discharge limitations
  - Acceptable quality levels

APP Monitoring Requirements

(AAC R18-9-A206)

- Monitoring requirements to be determined by ADEQ
- In depth recordkeeping of each sample required by the individual permit
- Monitoring record for each measurement made required by the individual permit
- Maintain monitoring records for a minimum of 10 years after date of required monitoring

APP Reporting Requirements

(AAC R18-9-A207)

- Permittee to notify ADEQ within 5 days of becoming aware of any permit violation
- Written report to ADEQ required within 30 days after permit violation
- Permittee to notify ADEQ within 5 days of becoming bankrupt or other federal or state environmental violations not covered under the permit

APP Compliance Schedule Requirements

(AAC R18-9-A208)

- Permittee to follow compliance schedule established in the individual permit
- ADEQ to consider following factors when defining compliance schedule requirements
  - Character and impact of discharge
  - Nature of construction or activity required by permit
  - Number of persons affected or potentially affected by discharge
  - Current state of treatment facility
  - Age of the facility

APP Temporary Cessation, Closure and Post-closure Requirements

(AAC R18-9-A209)

- Temporary Cessation
  - Notify ADEQ before cessation of 60 days or more
  - Implement conditions specified in the individual permit
- Closure
  - Notify ADEQ of intent to cease operations without resuming
  - Provide extensive closure plan within 90 days following notification
- Post-Closure
  - Provide detailed post-closure monitoring and maintenance plan in application for permit

Requirements of Underground Storage Facility Permit

- USF Site and Facility Characteristics (Section III-B)
- Unreasonable Harm and Hydrologic Feasibility Analysis (Section III-C)
- Technical Capability (Section III-C)
- Financial Capability (Section III-E)
- Legal Access (Section III-F)

USF Site and Facility Characteristics

(Section III-B)

- USF site characteristics
  - Narrative description
  - Regional map
  - Location site map
- Facility characteristics
  - Description of wells
  - Description of recharge basins
  - Description of trenches
  - Description of managed and constructed in-channel recharge
  - Define multiple use project, if necessary
  - Description of source water and delivery system
  - Facility map
  - Description of design contingencies

USF Site and Facility Characteristics

(Section III-B) continued

- Geology
  - Description of geologic characteristics at the site and surrounding area
  - Description of subsurface geology
  - Summary of available geologic logs and well driller logs within 1 mile of the site
  - Copies of geophysical logs and boring logs that support the USF application
- Hydrogeology
  - Provide evidence that an aquifer underlying the recharge site exists
  - Description of the aquifer including vertical and horizontal extent, thickness and lithology
  - Description of the vadose zone including vertical and horizontal extent, thickness and lithology and identify potential perching units
  - Description and map of current water levels
  - Description of water level changes – current and historic

USF Unreasonable Harm and Hydrologic Feasibility Analysis

(Section III-C)

- Maximum area of impact and mounding analysis
  - Calculate the maximum area of impact of a one-foot rise in the maximum water level proposed by the USF
  - Perform a mounding analysis of the maximum water storage volume at the proposed USF and include a graph of the anticipated rate of groundwater rise of the duration of the permit
  - Map of one-foot water level rise
  - Narrative supporting maximum area of impact and mounding analysis
- Land and water use inventory
  - Inventory of wells within one mile of the proposed USF
  - Inventory of structures, land uses, conditions and facilities that are likely to be impacted by rising water levels within the maximum area of impact
- Water quality
  - Provide evidence of APP permit for project

USF Unreasonable Harm and Hydrologic Feasibility Analysis

(Section III-C) continued

- Unreasonable harm analysis
  - Explain how the USF will be designed, constructed and operated and demonstrate that the maximum amount of water that could be in storage at any one time will not cause unreasonable harm to the land or other water users
  - State that the water storage at the USF will be governed by an APP and will not cause or contribute to a violation of state aquifer water quality standards
- Hydrologic feasibility conclusions
  - Evidence that facility will be designed, maintained, monitored, and operated for optimal recharge efficiency
  - Demonstrate that there are no insurmountable barriers to recharge and that storage of the maximum amount of water that could be in storage at anyone time is hydraulically feasible.

USF Unreasonable Harm and Hydrologic Feasibility Analysis

(Section III-C) continued

- Monitoring plan
  - Provide sufficient number of monitor wells
  - Provide locations from which water levels and water quality (both source water and groundwater) will be measured from
  - Dictate the alert level which indicates that a quick response is required to avoid the potential for unreasonable harm
  - Dictate the operational prohibition limit which is a level above the alert level and indicates that recharge activity must stop
  - Provide action plan for alert level and operational prohibition limit water levels and water quality
  - Describe the water quality monitoring plan
- Operation and maintenance plan

USF Technical Capability

(Section III-D)

- Demonstration of technical expertise:
  - Identify persons who will be principally responsible for construction and operation of USF and their licenses/certifications and resume

USF Financial Capability

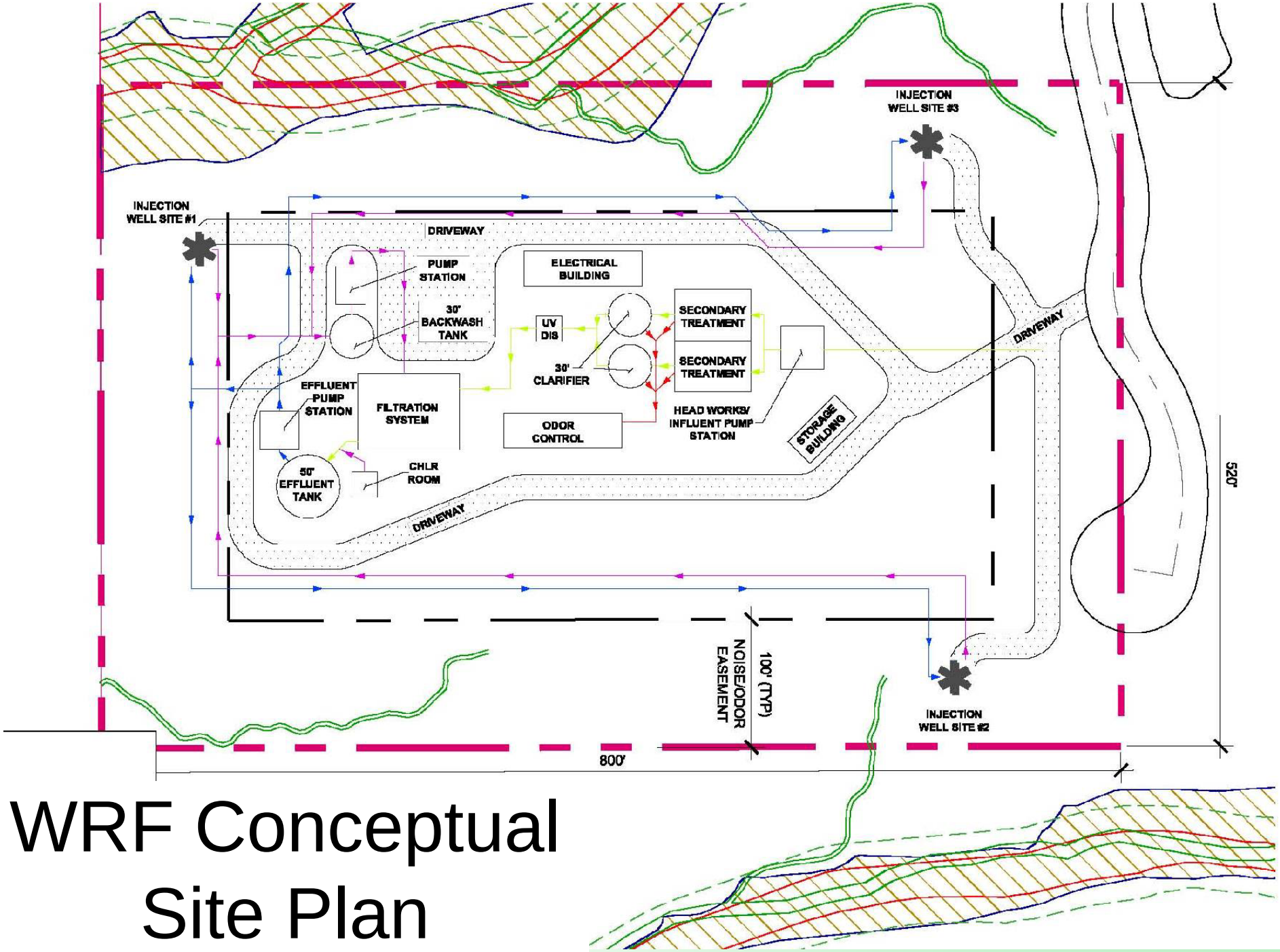
(Section III-E)

- Total cost estimate for the USF including construction, operational, regulatory compliance, and maintenance costs
- Certify that applicant posses adequate existing financial resources for construction and operation costs

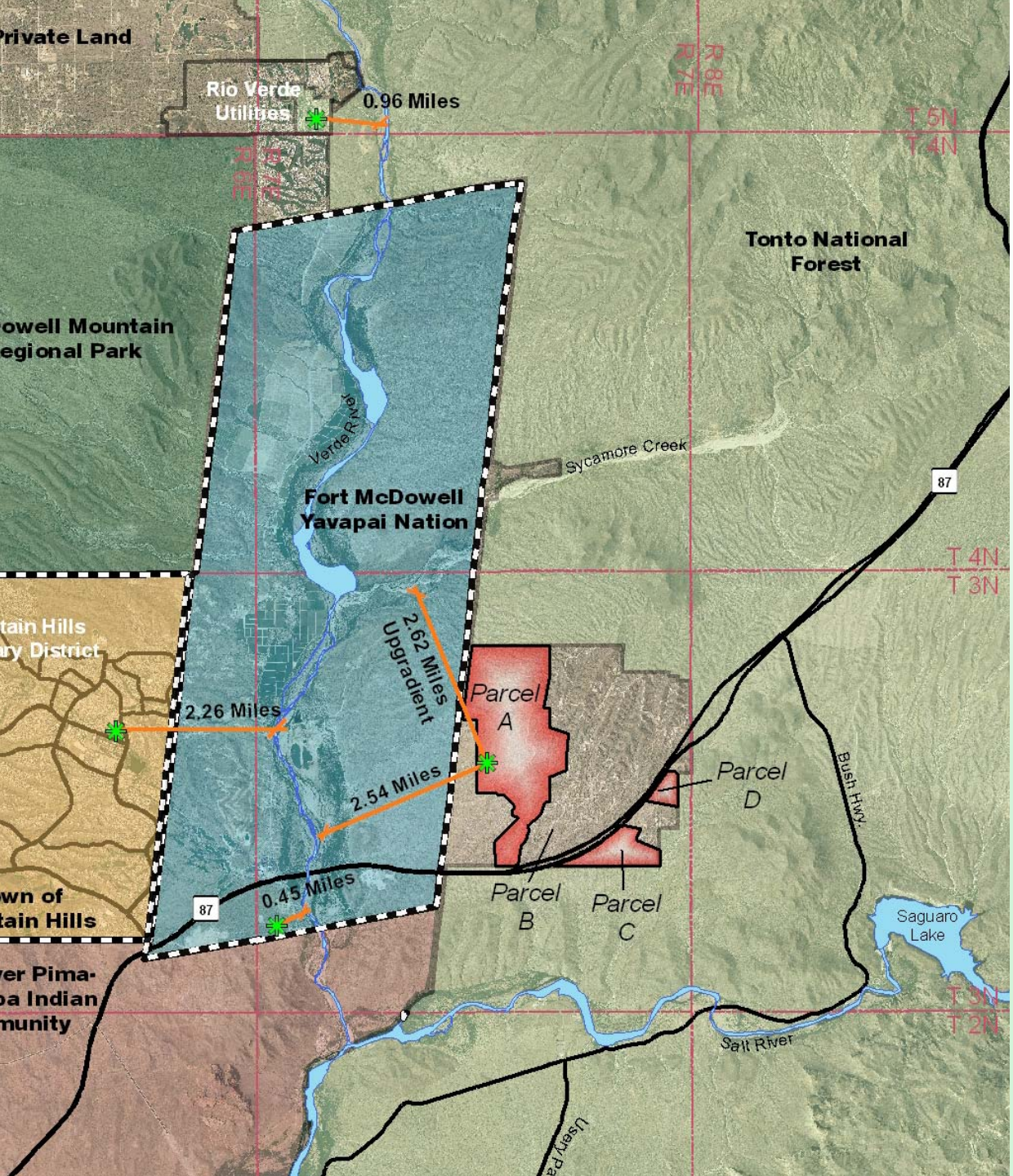
USF Legal Access

(Section III-F)

- Submit proof that applicant has legal access to the proposed site for purposed of constructing and operating at USF



WRF Conceptual Site Plan



Proximity to Waterways

Site Facilities

- Groundwater Well Site
- Monitoring Well Site
- Recharge Well Site
- Water Campus
- Lift Station